



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,561	11/24/2003	Myoung-Kee Baek	42165-0009	1881
26633	7590	08/23/2005	EXAMINER	
HELLER EHRMAN WHITE & MCAULIFFE LLP 1717 RHODE ISLAND AVE, NW WASHINGTON, DC 20036-3001			EVANISKO, LESLIE J	
			ART UNIT	PAPER NUMBER
			2854	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/718,561	Applicant(s) BAEK ET AL.	
	Examiner Leslie J. Evanisko	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The replacement sheets of drawings were received on June 10, 2005. These drawings are approved by the Examiner.

Claim Objections

3. Claims 2-6 and 10-12 are objected to because of the following informalities:

With respect to claim 2, line 2, it is suggested that the term "a" (first occurrence) be deleted and replaced with --the-- since the cliché was previously recited in claim 1.

With respect to claims 5 and 6, line 2, it is suggested that the term "an" in each claim be deleted and replaced with --the-- since the etching object layer was previously recited in the claims.

With respect to claim 10, line 1, it is suggested that the term "a" be deleted and replaced with --the-- since the resist material was previously recited in claim 1.

With respect to claim 11, it is noted that applicant recites “forming a buffer layer on a substrate by depositing one of an organic material and a metal material” in lines 3-4. However, the specification refers to the buffer layer as being part of the cliché and not the substrate and additionally the substrate is formed with an etching object layer. Therefore, it is not clear whether applicant is intending to recite the buffer layer on the cliché or the etching object layer of the substrate in the lines 3-4 of the claim. Furthermore, the Examiner points out that the buffer layer/substrate structure recited in lines 3-4 has not been appropriately connected to any of the other structure or method steps recited in the claim, making it unclear how this step is related to the rest of the method. In an effort to advance prosecution, the Examiner has assumed that applicant is intending to recite forming a buffer layer on the cliché (and not the substrate to be printed) and then patterning the buffer layer to provide the grooves in the cliché.

With respect to claim 12, in line 5, it is suggested that the term --cliché substrate-- be inserted after “the” to provide an appropriate recitation of which structure is formed with the first and second groove structures.

Appropriate correction and/or clarification is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 5, 7-8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagae et al. (EP 0 471 628 A1). Nagae et al. teach a method for forming a pattern of a LCD device comprising providing a cliché having at least a first groove with a first width and a second groove with a second width equal to at least a multiple of the first width and an interval, filling a resist material into the first and second groove structures of the cliché and applying the resist material onto an etching object layer of a substrate. See Figure 1(a)-(e) and column 4 in particular. Note Figures 1(a)-(e) of Nagae clearly show the grooves

Art Unit: 2854

are different widths and the larger sized groove can broadly be considered to be a multiple of the width one of the smaller grooves plus some “interval” as broadly recited. Furthermore, note the ink of Nagae functions as a “resist” material as broadly recited, as exemplified by the teaching in column 4, lines 16-23.

With respect to claim 5, note Nagae et al. teach applying the resist material onto an etching object layer comprises contacting and rotating a printing roll onto the cliché to transfer the resist material to a surface of the printing roll and contacting the resist material formed on the surface of the printing roll to transfer the material to an etching object layer of the substrate, as shown in Figures 1(b), 1(c), and 1(d) in particular.

With respect to claims 7-8, note Nagae et al. teach an etching object layer comprising metal (Al) or SiO_x (SiO₂).

With respect to claim 10, Nagae et al. teach depositing the resist material along the entire surface of the cliché and contacting a doctor blade onto the surface of the cliché to flatten the resist material and fill the resist material into the grooves and remove the resist material that remains on the surface. See column 4, lines 5-26 in particular.

6. Claims 1, 5-8, and 10 are rejected under 35 U.S.C. 102(a) and 35 U.S.C. 102(e) as being anticipated by Kwon et al. (US 2003/0084796A1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131. Additionally note the applied reference also constitutes prior art under 35 U.S.C. 102(a).

Kwon et al. teach a method for forming a pattern of a LCD device comprising providing a cliché 100 having at least a first groove 102 with a first width and a second groove 102 with a second width equal to at least a multiple of the first width and an interval, filling a “resist” material 104 (see paragraph [0034]) into the first and second groove structures of the cliché and applying the resist material onto an etching object layer 121 of a substrate 120. See Figure 3(a)-(c) and 5 and paragraphs [0029]-[0034] in particular. Note Figures 3(a)-(c) and 5 of Kwon et al. clearly show the grooves 104 are different widths and the larger sized groove can broadly be considered to be a multiple of the width one of the smaller grooves plus some “interval” as broadly recited. Furthermore, note Kwon et al. teach the printing ink 104 functions as a “resist” material as broadly recited in paragraph [0034] in particular.

With respect to claim 5, note Kwon et al. teach applying the resist material 104 onto an etching object layer 121 comprises contacting and

rotating a printing roll 110 onto the cliché 100 to transfer the resist material to a surface of the printing roll and contacting the resist material 104 formed on the surface of the printing roll to transfer the material to an etching object layer 121 of the substrate 120, as shown in Figures 3(b) and 3(c) in particular.

With respect to claim 6, note Kwon et al. teach applying the resist material onto the etching object layer can also be accomplished by a direct contact printing step as shown in Figure 5 and described in paragraph [0047]. In particular, the applying step shown in Figure 5 includes contacting the etching object layer with the cliché and detaching the substrate from the cliché to transfer the resist material from the grooves to the etching object layer. Note that the direct contact of the cliché and substrate would inherently include application of pressure to the substrate to some extent.

With respect to claims 7-8, note Kwon et al. teach an etching object layer 121 comprising metal (Al) or SiOx (SiO₂) or SiNx in paragraph [0033].

With respect to claim 10, Kwon et al. teach depositing the resist material along the entire surface of the cliché and contacting a doctor blade onto the surface of the cliché to flatten the resist material and fill the resist material into the grooves and remove the resist material that remains on the surface. See column Figure 3(a) and paragraph [0029] in particular.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 2-4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagae et al. in view of Kleist (US 5,662,041). Nagae et al. teach the method including providing a cliché with first and second groove structures having different widths, depositing a resist material on the surface of the cliché, flattening the resist material into the first and second groove

Art Unit: 2854

structures and removing the resist material from the surface of the cliché, transferring the resist material from the groove structures of the cliché onto a printing roll, and applying the resist material formed onto the printing roll onto an etching object to form a resist pattern having a uniform thickness as recited. See, for example, the above comments with respect to claim 1.

Although it is noted that Nagae et al. is silent with respect to the particular details of how the cliché is prepared and whether it includes providing a buffer layer and patterning the buffer layer, providing a printing cliché including a buffer layer made of metal or organic material to be patterned is well known in the art as exemplified by Kleist in column 1, lines 48-62 and column 3, lines 19-37. In view of this teaching, it would have been obvious to one of ordinary skill in the art to provide the cliché of Nagae et al. with a buffer layer to be patterned as taught by Kleist to provide simple manufacturing of a printing cliché for relatively short production runs.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagae et al. in view of Choi et al. (US 2002/0109799 A1). Nagae et al. teach a method as recited with the exception of the etching object layer being an organic layer as recited. However, note Choi et al. teach a liquid crystal display device including an insulating layer to be etched which is made of such materials as SiNx, SiO₂, or organic material is well known in the art, as exemplified by paragraph [0036] of Choi et al. in particular. In view of this

teaching, it would have been obvious to provide the etching object layer of Nagae et al. to include an organic layer as taught by Choi et al. as it would simply require the obvious selection of a known material based upon its known properties to provide an improved LCD device.

10. Claims 2-4 and 11-12 are rejected under 35 U.S.C. 103(a) as being obvious over Kwon et al. (US 2003/084796 A1) in view of Kleist (US 5,662,041).

The applied reference has a common inventor with the instant application. Note that this reference would not be disqualified as prior art under 35 U.S.C. 103(c) since it constitutes prior art under 35 U.S.C. 102(a) as well as under 35 U.S.C. 102(e). Applicant may overcome the applied art either by a showing under 37 CFR 1.132 that the invention disclosed therein was derived from the invention of this application, and is therefore, not the invention "by another," or by antedating the applied art under 37 CFR 1.131.

Kwon et al. teach a method for forming a pattern of a LCD device having all of the steps as recited, with the exception of the particular details of how the cliché is prepared and formed. Although it is noted that Kwon et al. is silent with respect to the particular details of how the cliché is prepared and whether it includes providing a buffer layer and patterning the buffer layer, providing a printing cliché including a buffer layer made of metal or organic material to be patterned is well known in the art as exemplified by Kleist in column 1, lines 48-62 and column 3, lines 19-37. In view of this teaching, it would have been

obvious to one of ordinary skill in the art to provide the cliché of Kwon et al. with a buffer layer to be patterned as taught by Kleist to provide simple manufacturing of a printing cliché for relatively short production runs.

With respect to claims 11 and 12, note Kwon et al. as modified by Kleist render obvious the method(s) of forming a pattern of an LCD device as recited. Note, in particular, the above comments with respect to claims 1, 5, 6, and 10.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1-8 and 10-12 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of copending U. S. Application No. 10/674,508. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims (for example, claim 1) of '508 teaches a method for

forming a pattern of a liquid crystal display device comprising providing a cliché with first and second groove structures having different widths, filling a resist material into the first and second groove structures of the cliché, and applying the resist material from the first and second groove structures of the cliché onto an etching object layer of a substrate.

With respect to claims 2-4, note claims 3, 6, and 11 of U.S. '508.

With respect to claim 5, note claims 10-11 of U.S. '508.

With respect to claims 6 and 12, note claim 12 of U.S. '508.

With respect to claim 7, note claim 9 of U.S. '508.

With respect to claim 8, note claim 8 of U.S. '508.

With respect to claim 10, note claim 7 of U.S. '508.

With respect to claim 11, note claims 10-11 of U.S. '508.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. Claim 9 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of copending Application No. 10/674,508 in view of Choi et al. (US 2002/0109799 A1). Claims 1-17 of U.S. '508 teach a method for forming a pattern of a liquid crystal display (LCD) device as recited, with the exception of the etching object layer comprising an organic layer. However, note Choi et al. teach a liquid crystal display device including an insulating layer to be etched

which is made of such materials as SiNx, SiO₂, or organic material is well known in the art, as exemplified by paragraph [0036] of Choi et al. in particular. In view of this teaching, it would have been obvious to provide the etching object layer of U.S. '508 to include an organic layer as taught by Choi et al. as it would simply require the obvious selection of a known material based upon its known properties to provide an improved LCD device.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

14. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

15. Applicant's arguments filed June 10, 2005 with respect to the 35 U.S.C 102 and 103 rejections with Nagae have been fully considered but they are not persuasive of any error in the above rejections.

In particular, applicant argues that preferred embodiment 1 and Figure 1 of Nagae does not teach a resist material since it describes a printing ink being filled into the grooves. Furthermore, applicant argues that this printing ink material is distinct from "resist" material since Nagae also teaches the use of photoresist material described by Nagae in column 5 with reference to the embodiment shown in Figures 4(b)-4(d).

However, the Examiner disagrees with this argument. Firstly, the term “resist” is broadly defined by The American Heritage Dictionary of the English Language, 4th edition, as “a substance that can cover or protect a surface, as from corrosion.” The printing ink described with reference to the first embodiment of Nagae, as described in column 4, lines 5-26 in particular, is applied to the surface of the film layer 16 of the base substrate and then subjected to further etching to fabricate the appropriate patterns on the base. Furthermore, it is noted that Nagae teaches “a printing process including preparing ink patterns to define the area to be affected by the application of an etching process” in claim 1. Since the printing ink of Nagae et al. broadly functions as a mask to define areas on the base to be affected by the application of a further etching process, this printing ink can be considered to be a “resist material” as broadly recited.

Furthermore, note that preferred embodiment 2 describes the ink as “a special purpose ink composition of carbon black blended in a melamin-base thermosetting resin having UV-blocking ability.” (see column 5, lines 26-29). Since this “ink” functions to block UV-radiation as described in lines 31-34 of column 5, it again can be considered to provide a masking function and thereby can be considered to be a resist material as broadly recited.

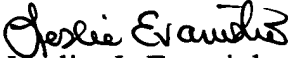
In view of the above reasoning, the Examiner is not persuaded of any error in the above prior art rejections.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Leslie J. Evanisko** whose telephone number is **(571) 272-2161**. The examiner can normally be reached on M-Th 7:30 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew H. Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Leslie J. Evanisko
Primary Examiner
Art Unit 2854

lje
August 16, 2005